

Application No.: 09/990604

Case No.: 57029US002

**Amendments to the Claims:**

The following Listing of Claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims**

1. (Currently Amended) A composition comprising a plurality of Ti/Sb mixed oxide nanoparticles in the form of an aqueous colloidal dispersion, wherein the Ti/Sb mixed oxide nanoparticles comprise a rutile-like crystalline phase, wherein the ensemble average rutile-like crystalline phase content of the Ti/Sb mixed oxide nanoparticles is at least 20 weight percent, and wherein the weight ratio of antimony to titanium in the Ti/Sb mixed oxide nanoparticles is in a range of from at least 0.42 up to and including 2.93.

2. (Original) The composition of claim 1, wherein the ensemble average nanoparticle size is less than about 100 nanometers.

3. (Original) The composition of claim 1, wherein the ensemble average nanoparticle size is less than about 40 nanometers.

Claims 4 - 7 (Canceled)

8. (Previously Presented) The composition of claim 1, wherein the ensemble average rutile-like crystalline phase content of Ti/Sb mixed oxide nanoparticles is at least 40 weight percent.

9. (Previously Presented) The composition of claim 1, wherein the ensemble average rutile-like crystalline phase content of Ti/Sb mixed oxide nanoparticles is at least 60 weight percent.

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10. (Previously Presented) The composition of claim 1, wherein the ensemble average rutile-like crystalline phase content of Ti/Sb mixed oxide nanoparticles is at least 80 weight percent.

11. (Original) The composition of claim 1, wherein substantially all of the Ti/Sb mixed oxide nanoparticles contain a rutile-like crystalline phase.

12. (Previously Presented) The composition of claim 1, wherein the ensemble average rutile-like crystallite size is less than 20 nanometers.

13. (Previously Presented) The composition of claim 1, wherein the ensemble average rutile-like crystallite size is less than 15 nanometers.

14. (Original) The composition of claim 1, wherein the nanoparticles have at least one organic moiety bound to the nanoparticle surface.

15. (Currently Amended) A method for preparing an aqueous colloidal dispersion of Ti/Sb mixed oxide nanoparticles comprising the steps of:

a) providing an aqueous titania precursor, wherein the aqueous titania precursor is the reaction product of hydrogen peroxide with a titanium alkoxide;

b) providing an aqueous antimony oxide precursor;

c) combining with mixing both aqueous precursors; and

d) hydrothermally processing the mixture;

wherein the weight ratio of antimony to titanium is in the range of from about 0.42 to about 2.93.

16. (Canceled)

17. (Currently Amended) The method of claim 1516, wherein the titanium alkoxide is titanium tetraisopropoxide.

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18. (Currently Amended) The method of claim 15, wherein the aqueous antimony oxide precursor is selected from a reaction ~~product~~<sup>products</sup> of an antimony alkoxide with hydrogen peroxide and colloidal  $\text{HSb(OH)}_6$ .

19. (Original) The method of claim 18, wherein the aqueous antimony oxide precursor is colloidal  $\text{HSb(OH)}_6$ .

20. (Original) The method of claim 15, further comprising the step of modifying the surface of the nanoparticles.

21. (Original) The method of claim 15, wherein the pH of the mixture is between about 5 and about 8.

22. (Original) The method of claim 15, further comprising the step of centrifuging the hydrothermally processed mixture.

23. (Original) The method of claim 15, wherein hydrothermally processing comprises passing the mixture through a stirred tube reactor.

24. (Original) The method of claim 23, further comprising the step of centrifuging the hydrothermally processed mixture.

Claims 25 - 69 (Canceled)

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Interview Summary

Applicants' representative Bradford B. Wright and Dr. John T. Brady (a named inventor in the present application) gratefully acknowledge a telephone interview with Examiner D. Metzmaier on April 8, 2004, in which the essence of this response was discussed.